

## REMARKS

This application has been reviewed in light of the Office Action dated October 18, 2005. Claims 1-17 are presented for examination, of which Claims 1, 8 and 15 are in independent form. Claims 1-15 have been amended to define still more clearly what Applicants regard as their invention. Claims 16 and 17 have been added to provide Applicants with a more complete scope of protection. The abstract has been amended as to matters of form, and a substitute specification is submitted herewith. Favorable reconsideration is requested.

In the outstanding Office Action, the specification was objected to for various typographical errors, and the claims were objected to for lack of antecedent basis in the specification. As stated, there is submitted herewith, in both a marked and a clean version, a substitute specification, in which no new matter has been added, to address these objections. Applicants note, in this regard, that "therefor" at pages 15 and 20 is spelled as intended. Withdrawal of those objections is therefore respectfully requested.

Claims 1-15 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,040,023 (Yokoyama).

Independent Claim 1 is directed to an image ratio measuring method for use in an image forming apparatus for executing image formation by depositing a coloring material on a print medium based on image data. In that method, image data is entered, and in a first conversion step, is subjected to  $\gamma$ -conversion. Image formation is performed based on the converted image data. Also, in a second conversion step the entered image data is converted into image data having a linear relationship with the image density, and an image ratio is calculated, based on the number of pixels in which the coloring material

is deposited onto the print medium based on the image data converted in the second conversion step, the number of pixels corresponding to the size of the print medium, and the number of gradation levels per pixel.

The method of Claim 1, therefore, is premised on an image forming apparatus which executes  $\gamma$ -conversion on entered image data and further executes image formation on a print medium with a coloring material based on the  $\gamma$ -converted image data. Among other notable features of the method of Claim 1, is converting the entered image data (that has not been  $\gamma$ -converted) into image data having a linear relationship with image density, and calculating an image ratio based on the number of pixels in which the coloring material is deposited onto the print medium based on the converted image data, the number of pixels corresponding to the size of the print medium, and the number of gradation levels per pixel of the converted image data. By virtue of these features, it is possible to obtain accurately the factor for evaluating the characteristic of the image forming apparatus concerning the consumption amount of the coloring material. As a result, it is possible accurately to estimate the actual consumption amount of the coloring material.

*Yokoyama* relates to a technique in which an original image is read and a ratio of its dark portion is obtained, the obtained ratio is compared with a reference value, and the interval of supplying toner is shortened if the obtained ratio exceeds the reference value. Applicants submit, however, that nothing has been found, or pointed out, in *Yokoyama* that would teach or suggest any  $\gamma$ -conversion to be executed on input image data. Lacking such feature, therefore, nothing in that patent could suggest the method of Claim 1, and that claim is believed to be clearly allowable over that patent.

Independent Claims 8 and 15 are apparatus and system claims, respectively, corresponding to method Claim 1, and are believed to be patentable for at least the same reasons as discussed above in connection with Claim 1.


A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as a reference against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from one or the other of independent Claims 1 and 8, and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration or reconsideration, as the case may be, of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "L.P. Diana", followed by a horizontal line.

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